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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46161.1-2025

**Road vehicles - Pneumatic braking systems - Part 1: Pipes,
male fittings and tapped holes with facial sealing surface**

道路车辆 气压制动系 第1部分：管、端面密封外螺纹接头和螺纹孔

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 46161 "Pneumatic brake systems for road vehicles". GB/T 46161 has been published in the following parts.

- Part 1: Pipes, end-seal external threaded joints and threaded holes;
- Part 2: Pipes, cone-seal external threaded fittings and threaded holes.

This document is modified from ISO 4039-1:1998 "Pneumatic brake systems for road vehicles - Part 1: Tubes, end-seal male connectors and Threaded Hole".

This document has the following structural adjustments compared to ISO 4039-1:1998.

- Added Chapter 3;
- Chapter 4 corresponds to Chapter 3 of ISO 4039-1:1998, of which 4.1 to 4.3 correspond to 3.1 to 3.3 of ISO 4039-1:1998 3.3;
- Chapter 5 corresponds to Chapter 4 of ISO 4039-1:1998, of which 5.1 to 5.3 correspond to 4.1 to 4.3 of ISO 4039-1:1998 4.3.

The technical differences between this document and ISO 4039-1:1998 and their reasons are as follows.

- Changed the pipe size (see 4.1) to adapt to the current status of Chinese products;
- ISO 9227 (see 4.3) is replaced by the normative reference GB/T 10125 to adapt to my country's technical requirements;
- Changed the surface protection requirements (see 4.3, 5.3) to adapt to the requirements of different materials in my country.

Introduction

The external threaded joints and threaded hole structures with end face/cone face sealing are widely used in various valves, gas storage valves and other parts of the pneumatic brake system of road vehicles.

In the connection structure between the cylinder and the brake pipe, the thread size, tolerance, pipe material and surface protection and other factors have an impact on the air brake system.

The sealing performance and pipeline assembly process are of great significance. In order to further promote the control and energy storage of brake systems such as valves and air cylinders in my country In order to improve the universality and interchangeability of components and brake lines, GB/T 46161 "Pneumatic Braking System for Road Vehicles" was formulated, which is divided into two parts. constitute.

--- Part 1: Pipes, end-seal external threaded joints and threaded holes. The purpose is to specify the pipes used in pneumatic brake systems of road vehicles.

Basic dimensions, material requirements and surface protection requirements for metal and thermoplastic pipes, face-seal male threaded fittings and threaded holes.

--- Part 2: Pipes, cone-sealed external threaded joints and threaded holes. The purpose is to specify the pipes used in pneumatic brake systems of road vehicles.

Basic dimensions, material requirements and surface protection requirements for metal and thermoplastic pipes, cone-seal male threaded fittings and threaded holes.

1 Scope

This document specifies the metal and thermoplastic pipes used in the pneumatic brake system of road vehicles under the working conditions of system pressure below 2MPa.

Basic dimensions, material requirements and surface protection requirements for face-sealed external threaded joints and threaded holes.

This document applies to pneumatic brake systems of vehicles and trailers with air pressure below 2 MPa.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 10125 Artificial atmosphere corrosion test Salt spray test

3 Terms and Definitions

There are no terms or definitions that require definition in this document.

4.1 Tube size

The outside diameter D1 should be selected from the values specified in Table 1 and used in combination with the thread sizes specified in Table 3.

Table 1 Tube size

Unit is millimeter

Outer diameter D1 5 6 8 10 12 14 15 16 18 20

4.2 Tube material

The tube can be made of metal materials (such as steel, copper, copper alloy, etc.) or thermoplastic materials (such as polyamide, etc.).

4.3 Pipe surface protection

The inner and outer surfaces of the pipe should be protected and kept smooth and clean.

The outer surface of metal parts should be treated with anti-corrosion treatment. After the neutral salt spray test according to GB/T 10125, the outer surface of metal parts should meet the requirements of Table 2. Require.